

REMARKS

Claims 1-22 are pending in this application. By this Amendment, claims 1, 7, 9, 10, 11, 14, 18, and 20 are amended, and claims 21 and 22 are added.

FORMAL MATTERS

The Form PTO-326 indicates that some of the priority papers have been received. Priority has been claimed to only one prior application, which has been submitted. It is requested that receipt of the priority papers be clarified.

In the Office Action, FIG. 5 was objected to because of a misspelling. Submitted herewith is a replacement page with FIG. 5 showing the correct spelling of BASE. It is requested that the objection be withdrawn.

The drawings were also objected to because S60, depicted in the FIG. 12, was not explained in the specification. By this Amendment, a typographical error in the specification is corrected thus explaining S60. It is requested that the objection be withdrawn.

The abstract was objected to and is now replaced with a more concise abstract that meets the proper language and format criteria for abstracts.

The disclosure was objected to because of a typographical error on page 3, which is corrected by this Amendment. Also, elements 32 and 52 were objected to as being described as transceivers or antennae. The description of elements 32 and 52 is accurate as transceivers as they are equipment that transmits and receives. For purposes of clarity, the specification is amended to note that the transceivers 32 and 52 may include antennae. It is submitted that the objection should be withdrawn.

Claim 10 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite due to a typographical error. By this Amendment, claim 10 is corrected.

PRIOR ART REJECTIONS

In summary, the CDMA wireless telecommunication system of this invention includes a waveform distortion detector for determining whether there is a distortion on a path waveform of the path according to a correlation profile formed based on at least two correlation values and a path recognizing unit for recognizing the path as a valid path for demodulating received signals based on the at least two correlation values. Using this combination of features, the wireless telecommunication system recognizes a valid path even when the received telecommunication signal(s) is in noisy environments. So, the battery is maintained on for as long as the path exists. Thus, communication can be effectively established between a mobile station and a base station without discarding a usable telecommunication path. Since usable paths are utilized when available, the system is not forced to enter a sleep mode of its mobile station as much as in conventional systems, which decreases power consumption. The drawbacks of the conventional system are discussed on page 3 of the specification, for example.

In distinction in the AAPA, as discussed on page 2, the prior art comparator 18 determines whether a specific set of received signals of a specific path is noise by comparing the correlation values for that set of received signals with the noise threshold value. The comparator 18 also compares a peak correlation value out of the correlation values for that set of received signals with the path recognition threshold value. When the path of the peak correlation value is larger than the path recognition threshold value, the path is recognized as a valid receiving path for demodulation. The prior art does not use a waveform distortion detector for determining whether there is a distortion on a path waveform of the path

according to a correlation profile formed **based on at least two correlation values** and a path recognizing unit for recognizing the path as a valid path for demodulating received signals **based on the at least two correlation values**.

Claim 1 is rejected under 35 U.S.C. §102(a) as being Applicant's Admitted Prior Art (AAPA). Claim 1 recites a method for recognizing a valid receiving path comprising steps of calculating at least two correlation values of the set of signals with at least two spread codes and recognizing the path as a valid receiving path for demodulating the received signals based on the at least two correlation values. The discussion of the AAPA merely discloses use of a single peak correlation value to assess noise. As the claimed features are simply not disclosed in the discussion of AAPA, claim 1 cannot be anticipated by the AAPA. Claim 1 is allowable.

Claims 2-5, 7, 8, 9, 10, are rejected under 35 U.S.C. §103 as being unpatentable over AAPA in view of Bahai et al., U.S. Patent No. 6,522,706. Bahai is cited for teaching of the use of peak correlation and non-peak correlation values that may be neighboring.

Bahai is directed to an efficient method of accurately estimating delay spread in multi-path transmission applications based on quantifying the effect of the actual delay spread on the shape of the correlation energy profile between the received signal and the synchronization pattern of the receiver. Depending on the degree of the estimated delay spread, an appropriate demodulation technique is selected for optimizing the receiver performance over a range of channel multi-path conditions. Bahai's invention relates to signal delay or generation of the correlation value in comparison of an interval with a predetermined span.

Claims 2-5 depend from claim 1, discussed above. Bahai does not provide a suggestion for using the steps of claim 1, particularly the steps of calculating and recognizing

using two correlation values. Thus, Bahai combined with AAPA does not render claims 2-5 obvious.

Claim 7 recites a method for recognizing a valid receiving path for demodulating received signals out of a plurality of receiving paths including the steps of forming a path waveform according to a correlation profile based on at least calculated two correlation values, determining whether there is a distortion of that path waveform and recognizing the path as valid based on the determination. As noted above, the AAPA does not use such a step. Bahai does not remedy this deficiency or provide a suggestion for modifying the AAPA. As such, claim 7 is not rendered obvious. Claim 8 depends from claim 7 and is allowable for at least the above reasons and for the additional features recited therein.

Claim 9 relates to a method for recognizing a valid receiving path using a steps of forming a path waveform according to a correlation profile based on at least two correlation values, determining whether there is a distortion on the path waveform, and recognizing the path as a valid receiving path based on the results of a comparison between the peak correlation value and a predetermined threshold and based on the determination. Claim 10 depends from claim 9 and is allowable for at least the above reasons and for the additional features recited therein.

Claim 6 is rejected under 35 U.S.C. §103 as being unpatentable over AAPA in view of Bhagalia et al., U.S. Patent No. 5,815,798.

Bhagalia teaches of adjusting a slave code sequence to match a master code sequence of a transmitter by calculating a difference between average powers of early and late correlation points to control fine tuning adjustments. Bhagalia does not teach of recognizing a valid path based on a calculation of at least two correlation values of the set of signals with at least two generated spread codes, each with its own delay time, as recited in claim 1. As

Bhagalia does not remedy the deficiencies of the AAPA, Bhagalia does not render claim 6, dependent from claim 1, obvious.

Claim 11 is rejected under 35 U.S.C. §103 as being unpatentable over AAPA in view of Yugawa, U.S. Patent No. 6,233,272, which is cited as teaching of a path detector.

Claim 11 recites a CDMA wireless telecommunication mobile station comprising a spread code generator, a correlator for calculating at least two correlation values and a path recognizing unit for recognizing a valid path based on the two correlation values. Yugawa teaches of a correlator that performs an operation that results in an estimated impulse response. The output signal is applied to the path detector. Yugawa does not disclose the use of a path recognizing unit that recognizes a valid path based on at least two calculated correlation values. Accordingly, Yugawa does not remedy the deficiencies of the AAPA and cannot anticipate claim 11.

Claims 12-16 and 18-20 are rejected under 35 U.S.C. §103 as being unpatentable over AAPA in view of Yugawa, U.S. Patent No. 6,233,272, and further in view of Bahai and Ito, U.S. Patent No. 6,553,059.

Claim 18 recites a CDMA wireless telecommunication system wherein the mobile station comprises a spread code generator, a correlator for calculating at least two correlation values, a waveform distortion detector for determining whether there is a distortion according to a correlation profile based on at least two correlation values, and a path recognizing unit for recognizing a valid path based on the least two correlation values. The AAPA, Yugawa and Bahai are discussed above. Ito calculates a correlation value using an arrangement for comparing an adaptively set threshold value with a correlation value calculated in an interval shorter than the predetermined length at the time of the calculation of the correlation value. Ito's invention relates to signal delay or generation of the correlation value in comparison to

an interval with a predetermined span. Ito does not teach of a waveform detector or path recognizing unit as recited in claim 18 and does not remedy the deficiencies of the other applied prior art. Therefore, the asserted combination does render claim 18 obvious. Claims 19 and 20 recite additional features from claim 18 are not rendered obvious for at least the same reasons above.

Claims 12-16 depend from claim 11, discussed above. As neither Bahai nor Ito remedy the deficiencies of the combination of AAPA and Yugawa, claims 12-16 are not rendered obvious.

Claim 17 is rejected under 35 U.S.C. §103 as being unpatentable over AAPA in view of Yugawa, U.S. Patent No. 6,233,272, and further in view of Bahai, Ito, and Bhagalia et al.

Claim 17 depends from claim 12, discussed above. As neither Bahai, Ito, nor Bhagalia remedy the deficiencies of the combination of AAPA and Yugawa, claim 17 is not rendered obvious.

New claims 21 and 22 are presented to recite additional features of the invention, shown in FIGS. 7, 8, and 9. These claims also define over the prior art.

It is submitted that the application is in condition for allowance. None of the asserted prior art references, taken alone or in combination, disclose or suggest the claimed invention. Further, there is insufficient suggestion in the prior art to make the asserted combinations to result in the precise combination of elements recited in the claims.

Prompt consideration and issuance is requested. Should further issues require resolution prior to allowance, the Examiner is requested to telephone the undersigned.

Respectfully submitted,

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